

REMARKS

In response to the Office Action mailed December 2, 2003, the Applicant respectfully requests reconsideration.

Claims 1-16 were previously pending in this application. By this amendment, Applicant cancels claim 7 without prejudice or disclaimer, amends claim 1 and adds claim 17. As a result, claims 1-6 and 8-17 are pending for examination, of which claims 1 and 6 are independent. No new matter has been added.

In response to the objections to claim 7 (Office Action, ¶2), Applicant has cancelled claim 7 without prejudice or disclaimer. Accordingly, the objection is rendered moot.

1. Claims 1-5 and 17 Patentably Distinguish Over Okano

Claims 1 and 4 stand rejected (Office Action, ¶4) under 35 U.S.C. §102(b) as purportedly being anticipated by U.S. Patent No. 4,262,295 (Okano). Applicant respectfully traverses this rejection.

1.1 Discussion of Okano

Okano is directed to a semiconductor device particularly suited for use as a surge voltage arrester. (Col. 1, lines 13-15). Okano discloses that the semiconductor device includes a chip 9 consisting of a base layer 1, and emitter layer 2, a collector layer 3 and electrodes 4 and 5. (Col. 2, line 67-col. 3, line 2). Fig. 2 shows an equivalent circuit of the semiconductor device illustrated in Fig. 1, the equivalent circuit including regions A and B. (Col. 3, lines 30-34; Fig. 2).

Fig. 3 shows the individual voltage-current characteristics for the two transistors A and B. As illustrated in Fig. 3, from a point b to a point c on the voltage-current curve of transistor A, the transistor A exhibits a negative resistance. (Col. 3, lines 59-62; Fig. 3). The combined voltage-current characteristics of the two transistors A and B results in the voltage-current characteristic of the entire semiconductor device illustrated in Fig. 4. (Col. 3, lines 64-66; Fig. 4). As illustrated in Fig. 4, the semiconductor device exhibits a negative resistance from point b to point c, after which the current rises very steeply (i.e., vertically). (Col. 3, line 67-Col. 4, line 1; Fig. 4).

Fig. 6 also shows the voltage-current characteristics of the semiconductor device. (Col. 4, lines 42-45; Fig. 6). The y-axis of the graph of Fig. 6 indicates that the current range shown is 0-120 *milliamperes*. As is clear from Fig. 6, the semiconductor device of Lee only exhibits a

negative resistance for currents of about 100 milliamperes or less. For currents exceeding 100 milliamperes, the voltage-current curve is vertical, indicating that for currents greater than 100 milliamperes, the voltage is essentially constant. In other words, Fig. 6 illustrates that the semiconductor device of Okano does not exhibit negative resistance for currents greater than about 100 milliamperes.

1.2 Claim 1 is Not Anticipated By Okano

Claim 1 has been amended as shown above to recite:

A clipping device formed of a vertical NPN transistor having an unconnected base, an emitter connected to a terminal on which positive voltage peaks are likely to appear, and a grounded collector, the transistor parameters being set so that **the transistor exhibits a negative dynamic resistance at least for currents greater than about 1 ampere.**

Claim 1 is not anticipated by Okano because Okano fails to teach or suggest a clipping device exhibiting a negative dynamic resistance at least for currents greater than about 1 ampere. Rather, Okano discloses a transistor that exhibits negative dynamic resistance only for currents less than about 100 milliamperes.

In view of the foregoing, claim 1 is not anticipated by Okano. Accordingly, Applicant respectfully requests that the rejection of claim 1 under §102(b) as being anticipated by Okano be withdrawn.

Claims 2-5 and 17 each depend from claim 1 and are patentable for at least the same reasons. Accordingly, Applicant respectfully requests that the rejections of claims 1 and 4 under §102(b) be withdrawn.

2. Claims 6 and 8-16 Patentably Distinguish Over Okano

Claims 6, 8-10, 15 and 16 stand rejected (Office Action, ¶4) under 35 U.S.C. §102(b) as purportedly being anticipated by Okano. Applicant respectfully traverses this rejection.

Claim 6 recites:

A clipping device to protect a circuit from overvoltages, the clipping device comprising:
a first contact arranged for connection to the circuit;
a second contact arranged for connection to a reference potential; and

a semiconductor component coupled between the first and second contacts and adapted to break down when an overvoltage is applied to the first contact;

wherein the clipping device exhibits a negative dynamic resistance after breakdown of the semiconductor component at least for currents in a range from 1 to 10 amperes.

Claim 6 is not anticipated by Okano because Okano does not teach or suggest a clipping device that exhibits a negative dynamic resistance at least for currents in a range from 1 to 10 amperes. Rather, Okano discloses a semiconductor device that exhibits a negative dynamic resistance only for currents less than about 100 milliamperes.

In view of the foregoing, claim 6 patentably distinguishes over Okano. Accordingly, Applicant respectfully requests that the rejection of claim 6 under §102(b) as being anticipated by Okano be withdrawn.

Claims 8-16 each depend from claim 6 and are patentable for at least the same reasons. Accordingly, Applicant respectfully requests that the rejections of claims 8-10, 15 and 16 under §102(b) be withdrawn

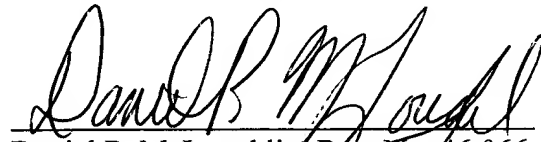
CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

BERNIER et al., Applicants



Daniel P. McLoughlin, Reg. No. 46,066
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2211
Telephone: (617) 720-3500

Docket No. S1022.80484US00

Date: April 2, 2004

x04/02/2004